

AMENDMENTS TO THE CLAIMS

1-14. (canceled)

15. (new) A method of determining the risk of developing bone disease in a test individual, said method comprises the step of:

examining the expression level of a WNT signaling antagonist in said test individual, wherein increased expression of said antagonist compared to that in normal individual indicates that said test individual has the risk of developing bone disease.

16. (new) The method of claim 15, wherein said WNT signaling antagonist is soluble frizzled related protein 3 (SFRP-3/FRZB) or the human homologue of Dickkopf-1 (DKK1).

17. (new) The method of claim 15, wherein said expression level is determined at the nucleic acid level or protein level.

18. (new) The method of claim 17, wherein said expression level is determined by PCR assays or enzyme-linked immunosorbent assays.

19. (new) The method of claim 15, wherein said test individual has a disease selected from the group consisting of multiple myeloma, osteoporosis, post-menopausal osteoporosis and malignancy-related bone loss.

20. (new) The method of claim 19, wherein said malignancy-related bone loss is caused by breast cancer metastasis to the bone or prostate cancer metastasis to the bone.

21. (new) A method of determining the risk of developing bone disease in a test individual, said method comprises the steps of:

obtaining biological samples from said individual; and
examining the level of DKK1 protein in said samples,
wherein increased level of DKK1 protein compared to that in normal individual indicates that said test individual has the risk of developing bone disease.

22. (new) The method of claim 21, wherein said biological samples are blood samples or bone marrow plasma samples.

23. (new) The method of claim 21, wherein said level of DKK1 protein is determined by an enzyme-linked immunosorbent assay.

24. (new) The method of claim 21, wherein said test individual has a disease selected from the group consisting of multiple myeloma, osteoporosis, post-menopausal osteoporosis and malignancy-related bone loss.

25. (new) The method of claim 24, wherein said malignancy-related bone loss is caused by breast cancer metastasis to the bone or prostate cancer metastasis to the bone.

26. (new) A method of treating or preventing bone disease in an individual, said method comprises the step of inhibiting the expression of a WNT signaling antagonist.

27. (new) The method of claim 26, wherein said WNT signaling antagonist is soluble frizzled related protein 3 (SFRP-3/FRZB) or the human homologue of Dickkopf-1 (DKK1).

28. (new) The method of claim 26, wherein the expression of said antagonist is inhibited at the nucleic acid level or protein level.

29. (new) The method of claim 26, wherein said individual has a disease selected from the group consisting of multiple myeloma, osteoporosis, post-menopausal osteoporosis and malignancy-related bone loss.

30. (new) The method of claim 29, wherein said malignancy-related bone loss is caused by breast cancer metastasis to the bone or prostate cancer metastasis to the bone.

31. (new) A method of controlling bone loss in an individual, comprising the step of inhibiting the expression of the *DKK1* gene (accession number NM012242) or the activity of the DKK1 protein.

32. (new) The method of claim 31, wherein said inhibition is mediated by a means selected from the group consisting of anti-sense oligonucleotides, anti-DKK1 antibodies, soluble LRP receptors, and a pharmacological inhibitor of DKK1 protein.

33. (new) The method of claim 31, wherein said individual has a disease selected from the group consisting of multiple myeloma, osteoporosis, post-menopausal osteoporosis and malignancy-related bone loss.

34. (new) The method of claim 33, wherein said malignancy-related bone loss is caused by breast cancer metastasis to the bone or prostate cancer metastasis to the bone.

35. (new) A kit for measuring the level of DKK1 protein in a biological sample, said kit comprises anti-DKK1 antibodies and reagents for detecting said antibodies.

36. (new) A method of treating or preventing bone disease in an individual having long term steroid use, said method comprises the step of inhibiting the expression of a WNT signaling antagonist.

37. (new) The method of claim 36, wherein said WNT signaling antagonist is soluble frizzled related protein 3 (SFRP-3/FRZB) or the human homologue of Dickkopf-1 (DKK1).

38. (new) The method of claim 36, wherein the expression of said antagonist is inhibited at the nucleic acid level or protein level.